

WHAT IS CLAIMED IS:

1. An electro-static discharge (ESD) protection circuit for an integrated circuit (IC) comprising:
 - a RC module having a resistor and capacitor connected in series; and
 - a current dissipation module for dissipating the ESD,wherein the capacitor is formed by a thick native gate oxide of a transistor, and
 - wherein the thick native gate oxide prevents leakage current formed therethrough so that to avoid leakage current through the current dissipation module during a normal operation of the IC.
2. The ESD protection circuit of claim 1 wherein the current dissipation module is a NMOS transistor connected between a pad of the IC and a grounding line of the IC.
3. The ESD protection circuit of claim 1 further comprising a control module connected between the RC module and the current dissipation module for controlling the current dissipation module.
4. The ESD protection circuit of claim 3 wherein the control module is an inverter.
5. The ESD protection circuit of claim 3 wherein the control module is a NMOS transistor.
6. The ESD protection circuit of claim 1 wherein a thickness of a gate oxide for a

regular transistor of the IC, not for using as a capacitor, is below 60 angstroms.

7. The ESD protection circuit of claim 1 wherein a threshold voltage of the transistor forming the capacitor is close to zero.

8. An electro-static discharge (ESD) protection circuit for an integrated circuit (IC) comprising:

a RC module having a resistor and capacitor connected in series;

a control module coupled to the RC module; and

a current dissipation module controlled by the control module for dissipating the ESD,

wherein the capacitor is formed by a thick native gate oxide of a transistor having a threshold voltage close to zero, and

wherein the thick native gate oxide prevents leakage current formed therethrough so that to avoid leakage current through the current dissipation module during a normal operation of the IC.

9. The ESD protection circuit of claim 8 wherein the current dissipation module is a NMOS transistor connected between a pad of the IC and a grounding line of the IC.

10. The ESD protection circuit of claim 8 wherein the control module is an inverter.

11. The ESD protection circuit of claim 8 wherein the control module is a NMOS transistor.

12. The ESD protection circuit of claim 8 wherein a thickness of a gate oxide for a regular transistor of the IC, not for using as a capacitor, is below 60 angstroms.
13. An electro-static discharge (ESD) protection circuit for an integrated circuit (IC) comprising:
- a RC module having a resistor and capacitor connected in series;
 - an inverter module with its input coupled to a connection point between the resistor and the capacitor; and
 - a current dissipation module for dissipating the ESD having one or more transistors with an output of the inverter controlling gates thereof,
- wherein the capacitor is formed by a thick native gate oxide of a transistor having a threshold voltage close to zero, and
- wherein the thick native gate oxide prevents leakage current formed therethrough so that to avoid leakage current through the current dissipation module during a normal operation of the IC.
14. The ESD protection circuit of claim 13 wherein the current dissipation module has one or more NMOS transistors connected between a pad of the IC and a grounding line of the IC.
15. The ESD protection circuit of claim 13 wherein a thickness of a gate oxide for a regular transistor of the IC not for using as a capacitor is below 60 angstroms.